Pre-requisites:

1. Microsoft SQL server 2012 instance is required.
2. SQL server integration services 2017
3. Visual studio 2017
4. Visual studio SSDT for 2017

Steps:

1. Create folder “Weather” in C drive. <This has been hardcoded for the ease of execution, this can configured when packages are deployed on SSIS services using parameters>
2. Unzip the contents of “code.zip” into “C:\Weather\”
3. Run “Create\_DWH.sql” on SQL Sever instance. This create DWH and required tables.
4. Run “Location\_config.sql”, this can be edited to add more locations. Please add new locations which will be automatically picked by packages.
5. Download History data for the above selected locations from [https://data.gov.uk/dataset/historic-monthly-meteorological-station-data](https://workable.com/nr?l=https%3A%2F%2Fdata.gov.uk%2Fdataset%2Fhistoric-monthly-meteorological-station-data) and save them in

“C:\Weather\” in <city>.txt format e.g., “aberporth.txt”.

1. Execute “OneTime\_DimTime.sql” on SQL server instance.
2. Execute “DimTime\_RefreshSP.sql” on SQL server instance.
3. Execute “Fact\_RefreshSP.sql” on SQL server instance.
4. Open “C:\Weather\ETL\WeatherDWH\WeatherDWH.sln” & Execute package “LoadHistory\_data.dtsx” in the solution through visual studio, this will load onetime history data load and cleanses the data as required.

For regular refresh:

1. Deploy “3HoursForecast.dtsx” on Integration services and schedule a job on SQL agent or any other third party schedulers. Package can be triggered through batch script or by calling stored procedure.
2. For the convenience of execution and review, this can be executed from your local through Visual studio 2017. Open “C:\Weather\ETL\WeatherDWH\WeatherDWH.sln” & Execute package “3HoursForecast.dtsx” in the solution through visual studio.

This will take 3hours data from the API, current and 5 days forecast and loads data into staging.

Further SPs are triggered in the package to update the day & monthly measures by aggregation.

The data in facts is incrementally updated and inserted, for troubleshooting <inserted> & <updated> time stamps have been added.